

**WHAT IS CLAIMED IS:**

1. A filter for tobacco products comprising:

a strongly acidic cation exchange resin and

a strongly basic anion exchange resin.

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2. The filter of claim 1 further comprising activated carbon.

3. The filter of claim 1 wherein said strongly basic anion exchange resin is in a bicarbonate form.

4. The filter of claim 1 wherein said strongly acidic cation exchange resin is selected from the group consisting of Dowex 50 and Dowex 50W.

5. The filter of claim 1 wherein said strongly basic anion exchange resin is selected from the group consisting of Amberlite IRA-900, Amberlite IRA 401, Dowex 1, Dowex 2, and Dowex 11.

6. The filter of claim 1 further comprising methylcellulose.

7. The filter of claim 1 further comprising a perforated polymer.

8. The filter of claim 1 wherein the ratio of filter material to tobacco ranges from 1 to 2 up to 1 to 10.

9. The filter of claim 1 wherein said tobacco filter is contained within a disposable cartridge.

10. The filter of claim 9 wherein said disposable cartridge has a first male threaded  
5 end and a second male threaded end.

11. The filter of claim 10 wherein said first male threaded end and said second male threaded end engage with a first female threaded channel and a second female threaded channel respectively.

12. The filter of claim 9 wherein said disposable cartridge has a first male threaded  
10 end and a second female end.

13. The filter of claim 12 wherein said first male threaded end inserts into a female threaded channel of a cigarette holder.

14. The filter of claim 12 wherein said first male threaded end inserts into a female threaded channel of a cigar holder.

15. The filter of claim 1 wherein said tobacco filter is unitized within a tobacco  
20 product.

16. The filter of claim 1 further comprising moisture wherein said moisture primes the ionic resin to improve its filtering properties.

17. The filter of claim 1 wherein said tobacco filter removes harmful components of  
25 tobacco smoke contained within a gas-vapor phase thereof.

18. The filter of claim 17 wherein said tobacco filter traps said harmful components from said gas-vapor phase and wherein said harmful components are therefore removed from a primary direct main-stream smoke and an altered secondary main-stream smoke that is exhaled into the environment.

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19. The filter of claim 1 wherein said filter is incorporated into a cigarette to remove harmful substances from cigarette smoke.

20. The filter of claim 1 wherein said filter is incorporated into a cigar to remove harmful substances from cigar smoke.

21. The filter of claim 9 wherein said disposable cartridge is used to remove harmful substances from pipe tobacco smoke.

22. The filter of claim 9 wherein said disposable cartridge is used within a cigarette holder to remove harmful substances from cigarette smoke.

23. The filter of claim 9 wherein said disposable cartridge is used with a cigar holder to remove harmful substances from cigar smoke.

24. The filter of claim 2 wherein said strongly acidic cation resin and said strongly basic anion resin and said activated carbon are mixed together.

25. The filter of claim 2 wherein said strongly acidic cation resin and said strongly basic anion resin and said activated carbon are separate components.

26. A method of assessing the relative safety of tobacco products comprising the steps of:

providing a tobacco product comprising a filter including a strongly acidic cation exchange resin, a strongly basic anion exchange resin and activated charcoal;

5 igniting the tobacco product;

having a human subject draw smoke from said tobacco product puff by puff through said filter;

lavaging oral cavity to collect fluid cells containing oral leukocytes; and

assessing said lavage.

27. The method of claim 26 wherein said assessment of said lavage is based upon the functional characteristics of said oral leukocytes.

28. The method of claim 26 wherein said assessment of said oral lavage is based upon the inhibition of the aerobic endogenous, aerobic (d) glucose dependent and anaerobic (d) glucose dependent metabolism of said lavage as biomarkers for standardization of relative safety of tobacco smoke.

29. The method of claim 26 wherein said assessment of said oral lavage is based upon the inhibition of myeloperoxidase and other enzyme systems contained within said oral lavage as biomarkers for standardization of relative safety of tobacco smoke.

30. The method of claim 26 wherein said assessment of said oral leukocytes encompasses cell extension, protoplasmic flow, organelle movement, pseudopodia formation and phagocytosis as biomarkers for standardization of relative safety of tobacco smoke.

31. The method of claim 26 wherein said tobacco product is selected from the group consisting of cigarettes, pipe tobacco and cigars.

5 32. A method of evaluating the adverse effects of tobacco products comprising the steps of:

providing a tobacco product comprising a filter including a strongly acidic cation exchange resin, a strongly basic anion exchange resin and activated charcoal;

igniting the tobacco product;

10 having a human subject draw smoke from said tobacco product puff by puff through said filter into their oral cavity;

collecting a fluid cell sample from the oral cavity of said human subject; and

measuring the activity of an enzyme within said sample.

15 33. The method of claim 32 wherein said enzyme is (L+) lactate dehydrogenase.

34. The method of claim 32 wherein said enzyme is myeloperoxidase.

35. The method of claim 32 wherein said enzyme is catalase.

20 36. The method claim 32 wherein said measurement of enzyme activity is the specific velocity constant.

37. The method of claim 32 further comprising the step of reducing the adverse effects of tobacco products to a value associated with a health hazard reduction scale.

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38. The method of claim 37 wherein upon taking ten (10) of said puffs per tobacco product, said value of said health hazard reduction scale of zero (0) would indicate that cumulatively all said ten (10) puffs adversely effect said enzyme within said fluid cell sample.

5 39. The method of claim 37 wherein upon taking ten (10) of said puffs per tobacco product, said value of said health hazard reduction scale of five (5) would indicate that a first five (5) puffs cumulatively adversely affect said enzyme within said fluid cell sample and a last five (5) puffs do not.

10 40. The method of claim 37 wherein upon taking ten (10) of said puffs per tobacco product, said value of said health hazard reduction scale of ten (10) would indicate that none of said ten (10) puffs adversely affect said enzyme within said fluid cell sample.

15 41. A method of marketing tobacco products to consumers by labeling said tobacco products with a health hazard reduction scale, the method comprising the steps of:

testing commercially available tobacco products comprising a filter including a strongly acidic cation exchange resin, a strongly basic anion exchange resin and activated charcoal;

assessing harm to oral leukocytes enzymes and metabolic pathways by said tobacco products;

20 rating said tobacco products based upon a relative health hazard reduction scale;

standardizing said health hazard reduction scale; and

placing said rating on the packaging of said tobacco products.

25 42. A method of assessing the long term effects of chronic use of tobacco, comprising the steps of:

collecting specimens of sputa from cohorts who are chronic bronchitics that are long term smokers;

collecting specimens of sputa from cohorts who are chronic bronchitics that are non-smokers;

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**DOCTORAL DISSERTATION**